

PATENT APPLICATION

INFANT RESTRAINT SYSTEMS AND METHODS

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INFANT RESTRAINT SYSTEMS AND METHODS

BACKGROUND OF THE INVENTION

[01] This invention relates generally to the field of baby products, and in particular to baby support pillows and seats. More specifically, the invention relates to restraint systems for support pillows and so-called baby bouncer seats.

[02] In the United States, a wide variety of baby seats are commercially available. Perhaps the most utilized are car seats that are used in automobiles. In recent years, such car seats have been designed to permit them to be used in other applications as well. For example, car seats may be removed from a base and used to hold a baby on the floor or to be placed into a specially designed stroller.

[03] Another type of baby seat is a rocker. This device is fashioned similar to a car seat but includes rocker arms to permit the baby to rock back and forth.

[04] A further type of baby seat is known as a bouncer. This device is typically constructed of some type of frame and a seat that is coupled to the frame. One example of such a bouncer is described in U.S. Patent No. 5,269,591, the complete disclosure of which is herein incorporated by reference.

[05] Another popular baby device is a support pillow. Exemplary support pillows are described in U.S. Patent Nos. 5,261,134; 5,546,620; 5,661,861; 6,038,720; 6,055,687; 6,434,770; 6,532,612; 6,279,185; and 6,412,128, the complete disclosures of which are herein incorporated by reference.

[06] This invention relates to restraint systems for support pillows and baby seats. As set forth below, this invention provides various features not currently available in baby pillows and seats.

BRIEF SUMMARY OF THE INVENTION

[07] In one exemplary embodiment, the invention provides a baby seat that comprises a base that may be placed on a support surface and a frame that extends at an angle relative to the base. A seat is coupled to the frame and is used to hold a baby. Further, the seat includes a generally crescent shaped outer padded section having a medial region for receiving the baby's head and a pair of curved arms that extend from the medial region. The padded section also defines an inner well section for receiving the baby's torso, with the baby's head

resting on the medial region. The curved arms of the padded section help to hinder side to side movement of the baby so that the baby remains in the seat.

[08] In one aspect, the curved arms each has a rounded end that generally face each other. The ends also provide additional padding to the baby. The seat may also include a securing system to hold the baby in the seat. The securing system may comprise a center holding strap that is coupled to the seat and may be positioned between the baby's legs. One or two securing straps may extend from the center strap and may be placed about the baby's torso and then connected to the seat. As the baby sits in the seat, the baby's legs may extend from and hang down from the seat.

[09] The frame may be constructed of a pair of inclined sections that extend from the base and at least one curved section that may have the same general shape as the outer padded section. The angle of incline may be in the range from about 20° to about 40°. Such an angle helps keep the seat relatively low to the ground.

[10] In another aspect, the seat may be constructed of a fabric. The padded section may comprise a fill material that is stuffed into the fabric pocket.

[11] In another embodiment, the invention provides a baby holding device that comprises a pillow having a medial region and two opposing arms extending from the medial region that define an inner well region. A securing system is operably coupled to the pillow and comprises a center holding strap that is configured to be placed between the baby's legs so as to extend over at least a portion of the baby's torso. The center holding strap may also be operably coupled to the opposing arms to hold the baby within the well region.

[12] The securing system may also further comprise a side strap extending from each arm. The side straps may include connectors that connect to mating connectors on the center holding strap. Examples of connectors include buckles, snaps, clips, a hook and loop fastener material and the like.

[13] In one aspect, the securing system further comprises a seat that is disposed across the well region. The seat may comprise a fabric coupled to the arms and the medial region. Conveniently, the center strap may be coupled to the seat at a location to permit the baby's feet to hang from the seat.

[14] In one feature, a hood may be operably coupled to the pillow. The hood may be foldable to permit the hood to be stored when not in use.

[15] In one aspect, the medial region has a height in the range from about 4 inches to about 8 inches and a width in the range from about 4 inches to about 10 inches. The arms have a height in the range from about 1 inch to about 10 inches, a width in the range from about 4

inches to about 10 inches, and a length in the range from about 10 inches to about 20 inches. Also, the well region has a width in the range from about 4 inches to about 12 inches and a length in the range from about 4 inches to about 12 inches. The pillow may further comprise a fabric shell encasing a fill material. Also, the ends of the arms may be spaced apart by a distance of about 0.5 inches to about 6 inches.

[16] The invention also provides an exemplary method for holding a baby. The method utilizes a baby holding device that comprises a pillow having a medial region and two opposing arms extending from the medial region that define an inner well region. A securing system is operably coupled to the pillow and comprises a center holding strap that is operably coupled to the pillow. A baby's torso is placed into the well region, with the baby's torso being cushioned by ends of the arms, and with the baby's head resting on the medial region. Also, the center holding strap is positioned between the baby's legs so as to extend over at least a portion of the baby's torso. Further, the center holding strap is secured to the arms.

[17] Optionally, a hood may be placed over the baby. Also, the center holding strap may be secured to the arms by coupling the center holding strap to side straps extending from the arms. In some cases, the securing system may further comprise a seat that is disposed across the well region. In this way, the baby may be placed onto the seat.

BRIEF DESCRIPTION OF THE DRAWINGS

[18] Fig. 1 is a front perspective view of a baby seat according to the invention.

[19] Fig. 2 is a side perspective view of the baby seat of Fig. 1.

[20] Fig. 3 illustrates the baby seat of Fig. 1 holding a baby.

[21] Fig. 4 is a front perspective view of a support structure of the baby seat of Fig. 1.

[22] Fig. 5 is a side view of the support structure of Fig. 4.

[23] Fig. 6 is a top plan view of the baby seat of Fig. 1.

[24] Fig. 7 is a perspective top view of one embodiment of a pillow with a restraint system according to the invention.

[25] Fig. 8 is a bottom view of the pillow of Fig. 7.

[26] Fig. 9 illustrates the pillow of Fig. 7 with an optional hood, and shown holding a baby.

DESCRIPTION OF THE SPECIFIC EMBODIMENTS

[27] The invention provides exemplary baby seats, support pillows and methods for their use. Also exemplary restraint systems are provided to help hold a baby within the seat or the pillow.

5 [28] The baby seats may be constructed of a support structure and a seat that is coupled to the support structure. The support structure is used to hold the seat above a support surface and has a generally open interior over which the seat extends. This configuration provides a comfortable surface for holding the baby. The support structure may also be somewhat resilient so that the baby may "bounce" when within the seat. Constructing the seat of a mesh
10 or other stretchy fabric also helps provide the seat with additional bounce.

[29] The seat has a relatively large width to help maintain the baby in the seat. Such a width may conveniently be provided by constructing the frame and the seat to have a generally round or curved outer periphery. Also, the seat may include an outer padded section to help prevent the baby from rolling side-to-side. Further, the outer padded section
15 provides cushion to the baby's head and upper legs.

[30] The support pillows generally include a pillow body that is constructed of a pillow body having a medial region and two opposing arms that define a well region. Examples of such pillows are described generally in U.S. Patent Nos. 5,261,134; 5,546,620; 5,661,861; 6,038,720; 6,055,687; 6,434,770; 6,532,612; 6,279,185; and 6,412,128, and copending U.S.
20 Application Nos. 10/426,067, filed April 28, 2003 and 10/612266, filed July 1, 2003, the complete disclosures of which are herein incorporated by reference. Coupled to the support pillow is a restraint system that helps hold the baby within the well region. The restraint system generally passes through the baby's legs and then up over the lower portion of the torso. The restraint system may also be connectable to the two arms or the well region to
25 strap the baby to the pillow. Optionally, the restraint system may include a seat that covers the well region similar to the other seats described herein. In one optional aspect, the restraint system may comprise a removable cover that covers the pillow body as well.

Examples of covers that could be modified to include a restraint system are described in U.S. Patent Nos. 6,625,828, 6,453,493 and copending U.S. Application No. _____,
30 filed February 27, 2004, entitled "Slipcovers for Support Pillows" (attorney docket no 17242-008430US), the complete disclosures of which are herein incorporated by reference.

[31] Referring now to Figs. 1 and 2, a baby seat device 8 will be described. Device 8 is constructed of a support structure 10 and a seat 12. As also shown in Figs. 4-6, support structure 10 is constructed of a base 14 and a frame 16. Conveniently, base 14 and frame 16

may be constructed as a continuous structure. For convenience of manufacturing, base 14 and frame 16 may be constructed of several components 18 that are connected together by connectors 20. The components 18 may be slid into connectors 20 and held in place by friction and by biasing forces created by the curved components 18.

5 [32] Base 14 may have a wide variety of shapes and conveniently includes pads 22 to protect the support surface on which base 14 rests. Frame 16 is constructed of a pair of inclined sections 24 and a curved section 26. Inclined sections 24 include curved portions 28 that position curved section 26 at an angle relative to base 14 and also provide “spring” or “bounce” to the seat. To do so, curved portions 28 may be constructed of a somewhat
10 resilient material, such as a metal, a plastic and the like.

[33] The angle between inclined sections 24 and base 14 is selected so as to keep seat 12 relatively close to the ground. This provides additional safety for the baby and also helps maintain the baby in the seat without restraining straps or devices. The angle of incline is preferably in the range from about 20° to about 40°, and more preferably from about 25° to
15 about 35°.

[34] Curved section 26 defines a generally open interior 30 across which seat 12 is placed. As best shown in Fig. 6, curved section 26 has generally the same shape as the outer periphery of seat 12. Curved section 26 provides seat 12 with a relatively large width to help prevent the baby from falling off the side of seat 12 as described hereinafter. Conveniently, a
20 padded roll 27 may be placed about curved section 26 to provide frame 16 with some padding.

[35] Referring primarily to Figs. 1, 2 and 6, seat 12 will be described in greater detail. Seat 12 is constructed of a bottom fabric piece 32 and a top fabric piece 34 that both extend across open interior 30 and are coupled to curved section 26 of frame 16. More specifically,
25 fabric pieces 32 and 34 are sewn together to form a seam 36 that extends along the outer edge of curved section 26. An opening 38 may exist between fabric pieces 32 and 34 to facilitate placement of seat 12 over frame 16.

[36] Seat 12 also includes a padded section 40 that generally follows the shape of curved section 26. Padded section 40 includes a medial region 42 and a pair of curved arms 44 and
30 46 that have generally rounded ends 48 and 50, respectively. Ends 48 and 50 are spaced apart from each other and also generally face each other. Padded section 40 is generally crescent shaped and defines an inner well section 52 for receiving a baby. Padded section 40 may be constructed by sewing a generally crescent shaped piece of fabric to fabric piece 34 and by including a fill material between the crescent shaped fabric piece and top fabric piece

34. A wide variety of fill materials may be used, such as polymer fibers, cotton, foamed materials and the like.

[37] As best shown in Fig. 3, a baby 54 may be placed in seat 12 such that the baby's torso rests in well section 52. The baby's head conveniently rests on medial region 42 which provides both support and cushion to the baby's head. The baby's lower legs and feet hang below seat 12. When the baby sits in seat 12, well section 52 somewhat sags while fabric pieces 32 and 34 are generally tight near opening 38. In this way, the baby may be held in seat 12 without the need for any restraining devices, although these may also be used as described hereinafter. Conveniently, ends 48 and 50 may also provide some padding to the baby's upper legs.

[38] The overall width of seat 12 along with the use of arms 44 and 46 helps to maintain baby 54 within seat 12. More specifically, such features help prevent side-to-side movement of the baby, or of having the baby roll or otherwise move off the edge of seat 12. For example, the width of seat 12 may be in the range from about 17 inches to about 37 inches, and more preferably from about 22 inches to about 32 inches. The width of each arm 44 or 46 may be in the range from about 6 inches to about 12 inches, and more preferably from about 8 inches to about 12 inches. As such, the inner well section 52 may have a width in the range from about 4 inches to about 12 inches. Arms 44 and 46 may have a length of about 10 inches to about 20 inches. Padded section 40 may have a height that extends above well section 52 of about 1 inches to about 6 inches, and more preferably from about 1 inches to about 3 inches. Such a height helps to prevent the baby from rolling out of seat 12 as well as providing padding to the head and arms.

[39] Padded section 40 may have a width in the range from about 8 inches to about 16 inches, and more preferably from about 10 inches to about 14 inches. Ends 48 and 50 may be spaced apart by about 2 inches to about 8 inches. Well section 52 may have a length in the range from about 6 inches to about 14 inches. However, it will be appreciated that other dimensions could also be used depending on the size of the baby.

[40] Optionally, seat 12 may be provided with a securing system 58 to help hold the baby within seat 12. Securing system 58 may be constructed of a center holding strap 60 that is secured to top fabric piece 34, such as by sewing, snaps, VELCRO, or the like. Center holding strap 60 is configured to be placed between the baby's legs and then extend upwards to the baby's stomach as illustrated in Fig. 3. Coupled to center holding strap 60 may be a pair of connectors 62 that are configured to be coupled to mating connectors 64 that are coupled to straps 66. Straps 66 are in turn coupled to top piece 34 and/or to the padded

section 40. In this way, straps 66 may be coupled to center holding strap 60 to position straps 66 about the baby's hips and help hold the baby within seat 12. The length of straps 66 may be adjusted by changing the location of connectors 64 along straps 66 to adjust how "tightly" center holding strap 60 may be secured to the baby. As shown, connectors 62 and 64 are buckle type connectors. However, other types of connectors may also be used, such as snaps, VELCRO, buttons and the like.

[41] In use, baby 54 is placed into well section 52, with the baby's head resting on medial region 42. Center holding strap 60 is pulled upward between the baby's legs and connectors 62 are joined to connectors 64. If needed, straps 66 may be tightened or loosened. As the baby moves within seat 12, seat 12 "bounces" up and down because of the design of support structure 10. If desired, a caregiver may press down on medial region 42 and then release the pressure to cause additional bouncing. While within seat 12, padded section 40, the width of seat 12 and securing system 58 all help hold the baby within seat 12.

[42] Referring now to Figs. 7 and 8, one embodiment of a support pillow 100 having a restraint system 102 will be described. Support pillow 100 comprises a pillow body 104 having a medial region 106 and two opposing arms 108 and 110 that define an inner well region 112. Pillow body 104 may be constructed of a fabric shell (optionally covered with a fabric cover) that encases a fill material. A wide variety of fill materials may be used, such as polyester fibers, beads, and the like. Also, inflatable bladders could be used as well.

Examples of how to construct pillow 100 are described generally in U.S. Patent Nos. 5,261,134; 5,546,620; 5,661,861; 6,038,720; 6,055,687; 6,434,770; 6,532,612; 6,279,185; and 6,412,128 and copending U.S. Application Nos. 10/426,067, filed April 28, 2003 and 10/612266, filed July 1, 2003; and 10/769,007, filed January 29, 2004, the complete disclosures of which are herein incorporated by reference.

[43] Pillow body 104 may be constructed in a variety of sizes. As one example, the width of pillow 100 at its widest point may be in the range from about 12 inches to about 32 inches, and more preferably from about 18 inches to about 28 inches. The width of each arm 108 or 110 may be in the range from about 4 inches to about 10 inches, and more preferably from about 4 inches to about 8 inches. As such, the inner well region 112 may have a width in the range from about 4 inches to about 12 inches. Pillow 110 may have a height that extends above well region 112 by about 1 inch to about 10 inches, and more preferably from about 4 inches to about 5.5 inches. Arms 108 and 110 may have a length in the range from about 10 inches to about 20 inches.

[44] Restraint system 102 may include a seat 114 that is coupled to pillow body 102 so as to cover well region 112. Seat 114 may comprise a fabric or other flexible material and provides a convenient resting place for the baby when sitting or lying on pillow 100. Seat 114 may be sewn to pillow body 104, usually by sewing seat 114 to the cover that covers the fill material. Restraint system 102 may further include a center strap 116 extending from seat 114. Center strap 116 may be sewn to seat 114 or may simply be an extension of seat 114. As best shown in Fig. 9, center strap 116 is configured to be placed between a baby's legs and then positioned over the front of the baby's torso. For convenience of discussion, center strap 116 may be described in terms of a middle portion 118 and two arm portions 120 and 122. With this configuration, middle portion 118 passes between the baby's legs, and arms portions 120 and 122 pass over the baby's stomach. Further, arm portions 120 and 122 may be coupled back to pillow body 104 to secure the baby within well region 112. For example, arm portions 120 and 122 could be coupled to arms 108 and 110, either directly or using a coupling arrangement. In some cases, arm portions 120 and 122 could be coupled to seat 112.

[45] As shown, a securing strap 126 passes through an opening in center strap 116 and includes female connectors 128. Extending from arms 108 and 110 are side straps 130 and 132 which are coupled to male connectors 134. Also, the length of side straps 130 and 132 may be adjusted by pulling them through male connectors 134. In this way, once the baby is placed onto pillow 110, center strap 116 may be pulled between the baby's legs and connectors 128 may be coupled to connectors 134 to form a buckled connection. Other connectors that may be used include buttons, snaps, a hook and loop fastener material, ties and the like. The ends of side straps 130 and 132 may be pulled to tighten the center strap 116 to the baby.

[46] By using restraint system 102, the baby is held in a supine position and prevented from sliding down off of seat 114. Further, arms 108 and 110 help to prevent the baby from rolling side to side, while medial region 106 provides support for the back, neck and head. Hence, the baby may sit in a reclined position, without sliding out of the pillow.

[47] As best shown in Fig. 9, a hood 140 may optionally be coupled to pillow 100. Hood 140 comprises a pair of bars 142 and 144 that are covered with a fabric covering 146. Hood 140 may be removably or permanently coupled to pillow 100, such as by using snaps, a hook and loop fastener material and the like. When not in use, bars 142 and 144 may be moved down toward medial region 106 where it can be stored on the outer periphery of pillow 100. In some cases, hood 140 may be removed altogether.

[48] The invention has now been described in detail for purposes of clarity and understanding. However, it will be appreciated that certain changes and modifications may be practiced within the scope of the appended claims.